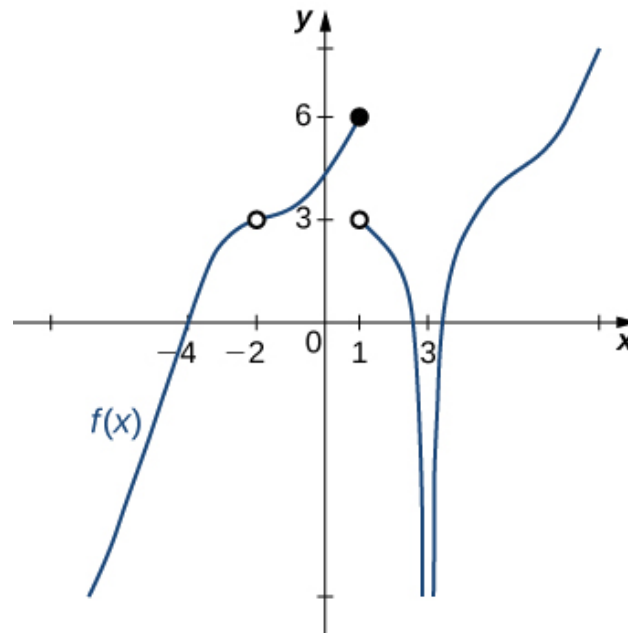


1. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x)$ does not exist.



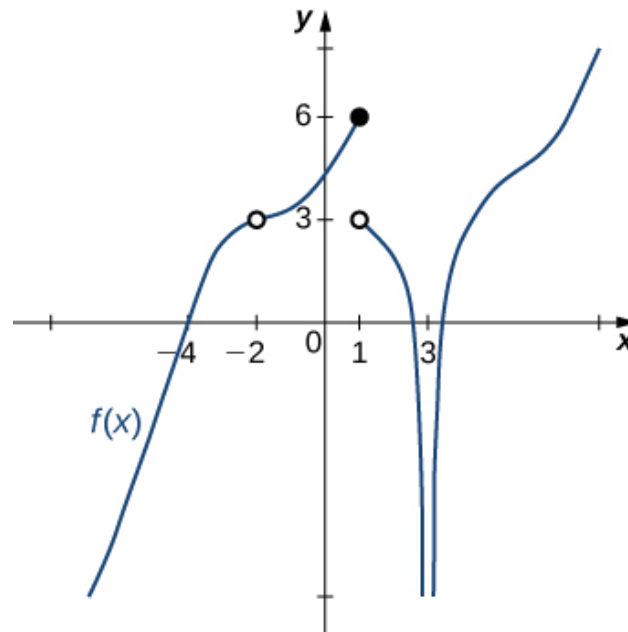
- A. 1
B. 3
C. -2
D. Multiple a make the statement true.
E. No a make the statement true.

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2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -7^-} \frac{-3}{(x+7)^3} + 3$$

- A. ∞
B. $-\infty$
C. $f(-7)$
D. The limit does not exist
E. None of the above

3. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x) = 3$.



- A. $-\infty$
B. 1
C. -2
D. Multiple a make the statement true.
E. No a make the statement true.
4. Based on the information below, which of the following statements is always true?

$f(x)$ approaches ∞ as x approaches 8.

- A. $f(x)$ is undefined when x is close to or exactly 8.
B. x is undefined when $f(x)$ is close to or exactly ∞ .
C. $f(x)$ is close to or exactly ∞ when x is large enough.
D. $f(x)$ is close to or exactly 8 when x is large enough.

E. None of the above are always true.

5. To estimate the one-sided limit of the function below as x approaches 9 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{9}{x} - 1}{x - 9}$$

- A. {9.1000, 9.0100, 9.0010, 9.0001}
 - B. {8.9000, 8.9900, 9.0100, 9.1000}
 - C. {9.0000, 8.9000, 8.9900, 8.9990}
 - D. {9.0000, 9.1000, 9.0100, 9.0010}
 - E. {8.9000, 8.9900, 8.9990, 8.9999}
-

6. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 5} \frac{\sqrt{8x - 15} - 5}{4x - 20}$$

- A. 0.100
 - B. ∞
 - C. 0.025
 - D. 0.707
 - E. None of the above
-

7. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 7} \frac{\sqrt{6x - 17} - 5}{4x - 28}$$

- A. 0.612
- B. 0.100

- C. 0.025
 - D. ∞
 - E. None of the above
-

8. Based on the information below, which of the following statements is always true?

$f(x)$ approaches 17.021 as x approaches 6.

- A. $f(x) = 17.021$ when x is close to 6
 - B. $f(x) = 6$ when x is close to 17.021
 - C. $f(x)$ is close to or exactly 17.021 when x is close to 6
 - D. $f(x)$ is close to or exactly 6 when x is close to 17.021
 - E. None of the above are always true.
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9. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow 5^-} \frac{3}{(x+5)^3} + 3$$

- A. $-\infty$
 - B. ∞
 - C. $f(5)$
 - D. The limit does not exist
 - E. None of the above
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10. To estimate the one-sided limit of the function below as x approaches 1 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{1}{x} - 1}{x - 1}$$

- A. $\{1.0000, 0.9000, 0.9900, 0.9990\}$

- B. $\{1.0000, 1.1000, 1.0100, 1.0010\}$
 - C. $\{1.1000, 1.0100, 1.0010, 1.0001\}$
 - D. $\{0.9000, 0.9900, 1.0100, 1.1000\}$
 - E. $\{0.9000, 0.9900, 0.9990, 0.9999\}$
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